

ABSTRACT OF THE DISCLOSURE

A method and apparatus for manufacturing wings includes a fixture that
5 holds wing panels for drilling and edge trimming by accurate numerically
controlled machine tools using original numerical part definition records, utilizing
spatial relationships between key features of detail parts or subassemblies as
represented by coordination features machined into the parts and subassemblies,
thereby making the parts and subassemblies intrinsically determinant of the
10 dimensions and contour of the wing. Spars are attached to the wing panel using
the coordination holes to locate the spars accurately on the panel in accordance
with the original engineering design, and in-spar ribs are attached to rib posts on
the spar using accurately drilled coordination holes in the ends of the rib and in
the rib post. The wing contour is determined by the configuration of the spars and
15 ribs rather than by any conventional hard tooling which determines the wing
contour in conventional processes.